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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,261	01/30/2006	Hiroshi Tanaka	040894-7375	1702
9629 7590 04/12/2007 MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			EXAMINER BRAKEWOOD, CANDACE ELIZABETH	
			ART UNIT	PAPER NUMBER
			3721	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/12/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/566,261

Applicant(s)

TANAKA ET AL.

Examiner

Candace Brakewood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/5/2007 and 3/1/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement filed February 5, 2007 and March 1, 2007 have been fully considered.

Drawings

2. The amendment to the specification regarding the drawings filed on February 5, 2007 is acknowledged and accepted. Accordingly, the drawings filed on January 30, 2006 are accepted.

Specification

3. The amended specification filed on February 5, 2007 is acknowledged and accepted.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (6,695,195). Claims 1-10 are rejected for the same reasons set forth in paragraph 8 of the previous Office Action, paper no. 20061030.

Regarding newly added claim 11, the rotary fan (6) disclosed by Nishikawa et al. ('195) is spaced from a first wall (the walls of the combustion chamber, 5), and the

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vortex generator (24) is disposed between the first wall and the fan, as can be seen in Fig. 5.

Regarding claim 12, the injection nozzle (22) and the ignition device (9) are disposed on one wall (the upper portion of the combustion chamber wall, 5), as they are located on top of this wall, and the vortex generator (24) is disposed on this wall (the side portion of the combustion chamber wall, 5).

Regarding claim 13, the vortex generator (24) is proximate to the injection nozzle (22), as shown in Fig. 5.

Response to Arguments

6. Applicants' remarks have been fully considered, but they are not deemed persuasive.

First, applicants contend that the ribs of Nishikawa et al. ('195) are not disclosed to generate a vortex near the injection nozzle. The examiner notes that the phrase "for generating a vortex near the injection nozzle in the combustion chamber so as to promote a mixing of the combustible gas and the air", as found in claim 1, is a functional recitation, and the ribs (24) disclosed by Nishikawa et al. ('195) are deemed capable of performing this function, as they are thin walls capable of tripping the air/gas flow generated by the fan to create vortices. It is also noted that one of the ribs (24) is located in close proximity to the injection nozzle (22).

Next, applicants argue that Nishikawa et al. ('195) do not disclose a retention generator, and rational is not provided for the statement that the ribs (24) are deemed capable of retaining the gaseous mixture near to the ignition device. Again, the

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examiner notes that the phrase "for generating a retention of the gaseous mixture mixed by the rotary fan near the ignition device" is a functional recitation, and the ribs (24) disclosed by Nishikawa et al. ('195), specifically the rib located closest to the ignition device (9), is deemed capable of performing this function because the rib closest to the ignition device would block some of the air/gas flow, and would therefore retain, or hold in place, some of the moving gas.

Lastly, applicants argue that new claims 11-13 are not disclosed by Nishikawa et al. ('195). The examiner cites paragraph 5 of this Office Action in regard to such arguments.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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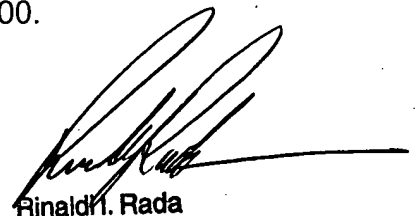
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Candace Brakewood whose telephone number is 571-272-3115. The examiner can normally be reached on Monday-Thursday, 7am-5:30pm.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on 571-272-4467. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Candace Elizabeth Brakewood
Patent Examiner
Art Unit 3721
April 10, 2007



Rinaldi Rada
Supervisory Patent Examiner
Group 3700